

Journal of Computer Assisted Learning

The questionable promise of social media for education: connective learning and the commercial imperative

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Abstract

Facebook and other social media have been hailed as delivering the promise of new, socially engaged educational experiences for students in undergraduate, self-directed, and other educational sectors. A theoretical and historical analysis of these media in the light of earlier media transformations, however, helps to situate and qualify this promise. Specifically, the analysis of dominant social media presented here questions whether social media platforms satisfy a crucial component of learning – fostering the capacity for debate and disagreement. By using the analytical frame of media theorist Raymond Williams, with its emphasis on the influence of advertising in the content and form of television, we weigh the conditions of dominant social networking sites as constraints for debate and therefore learning. Accordingly, we propose an update to Williams' erudite work that is in keeping with our findings. Williams' critique focuses on the structural characteristics of sequence, rhythm, and flow of television as a cultural form. Our critique proposes the terms *information design*, *architecture*, and above all *algorithm*, as structural characteristics that similarly apply to the related but contemporary cultural form of social networking services. Illustrating the ongoing salience of media theory and history for research in e-learning, the article updates Williams' work while leveraging it in a critical discussion of the suitability of commercial social media for education.

Keywords

connectivism, e-learning, Facebook, media theory, online education, philosophy of education.

Accepted: 23 November 2010

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The authors recognize the support of the Social Sciences and Humanities Research Council of Canada.

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Introduction

In recent years, new Web-based social media have been portrayed as placing the learner at the centre of networks of knowledge and expertise that potentially lead to new forms of learning and education despite the fact that these media themselves make no educational promises. Educators have advocated, for example, 'integrating Facebook, Ning, and other sites into K-12 [academic] life' (Davis 2010; see also Muñoz & Towner 2009). Advocates have promoted their use as part of a 'connectivist' learning theory. This recent move elevates social and communicative connections to the level of an epistemic category central to learning processes (e.g., Siemens 2006). This advocacy also often

bears the following underlying conviction: the open terms of access to online services and the practices of open source software development, for example, render these services and tools inherently 'democratic' in nature. They therefore 'empower' students (e.g., Downes, 2005; Couros 2009). This type of 'learning' is characterized not only by greater autonomy for the learner, but also by changing roles for the teacher; indeed, a collapse of the distinction between teacher and student altogether is indicative of 'connectivist learning' (Downes, 2005).

By updating Williams (1974) and proposing terms for his analysis of television that are applicable to social networking (*informational design, architecture, and algorithm*), we argue that social media like Facebook and Twitter are above all commercial in form and as practised, in substance.¹ Looking first at Facebook and then at similar services, we argue that their business models are inseparable from the type of user experience that they provide. Built-in conditions of use restrict these services' information design in ways that significantly detract from learner control and educational use. Advertising interests inform the structure, and through it, the content, of dominant social networking services. Facebook's primary function, for example, is connecting users ('eyeballs') with advertisers. Just as Williams indicated that commercialism ultimately render television beyond the reach of education, we conclude that commercial pressures threaten to limit the potential of the social Web for education and learning. We work toward this conclusion by making the case that social networking offers only a truncated capacity to foster disagreement and debate because dominant programmes and models primarily foster conviviality and 'liking'.

From television to the social web

In providing a media-historical critique of relatively new, commercial social media, it is first important to recognize the fundamental contribution of Raymond Williams to the study of commercial media more generally. Williams' 'insights . . . have been a major, shaping contribution to the constitution of an academic discipline' (Lister *et al.* 2002, p. 73).

Williams' rich, if at times abstract, historical and sociological formations about cultural production and society provide some of the master templates for what has become mainstream media studies. Countless detailed

studies of all kinds of media are guided and informed by his careful and penetrating outlines of a theory of media as a form of cultural production. Whenever we consider . . . new media as subject to control and direction by human institutions, skill, creativity and intention, we are building upon such a Williamsite emphasis. . . . (Lister *et al.* 2002, p. 73).

The grounds for current approaches to new media that Lister *et al.* detail in their *New Media Studies* owe much to Williams' analyses of TV and other media as cultural forms. These authors highlight the significance of Williams' work on TV today by stating that 'while the debate between Williams and [Marshall] McLuhan centres around the "old medium" of TV, that debate continues to frame contemporary cultural discussions of technology in general, and of cyberspace in particular' (Lister *et al.* 2002, p. 85). The ongoing significance of Williams' work is the premise from which our historical analysis proceeds.

Individual scholarly work also continues to develop Williams' concepts for the digital age. Des Freedman employs Williams's work on technological innovation to analyse the Internet (Freedman 2002). For Williams, technological innovation is embedded in socio-economic contexts. The study of innovation needs to assume then the appropriate shape of a media history. The practice of a Williamsite media history is then the practice of a commitment to democratic communications. We argue that Williams' insight could apply more broadly to research in e-learning and connectivist approaches to it not least because of the latter's commitment to opening up education and rendering it more democratic. Freedman's conclusions in the following about a new mass medium are sceptical: 'contemporary social relations set limits on the development of the Internet as a democratic medium' (Freedman 2002, p. 425). Recent innovations in social networking and its possible use as an educational tool, we argue, should be subject to a similar historical scrutiny.

Paying homage to Raymond Williams' 1974 *Television: Technology and Cultural Form*, Yang (2009) also employs Williams' insights for the Internet age. Yang reiterates that Williams' work 'offers a theoretical basis' to think beyond technological deterministic accounts of the Internet' (Yang 2009, p. 109), but stops short of ameliorating Williams' terms for this age. It is in Williams' work on television that he most thoroughly sets out a conceptual frame, we would like to highlight, for

understanding how advertising influences not only the form but also the 'non-commercial' content of programming or information. It is to this work that we now turn.

Social networking as a cultural form

Here we propose a homology between aspects of television and aspects of Web 2.0 that constitutes a development from previous theoretical perspectives. We claim that Williams' work on television can be updated to account for social media's base in advertising and therefore restriction as an educational tool *per se*. What Williams terms the characteristics of *sequence*, *rhythm*, and *flow* functions of television present 'a formula of [television] communication, [and] an intrinsic setting of priorities' (Williams 1974, p. 66) within the new mass medium. These terms can be updated for social networking websites as: *informational design*, *architecture*, and *algorithm*. The article therefore provides a development to both Williams' work on television and to previous conceptions of online education.

Williams was not alone in outlining significant cause for scepticism of television. In his 1980 analysis of network news coverage of politics in the 1960s, Todd Gitlin describes the situation rather succinctly: the goal of these media organizations, he states, is to sell a product, and the product that 'the networks sell is the attention of audiences; their primary market is the advertisers themselves' (Gitlin 1980, p. 280). In the days of network television dominance, the way that media organizations would 'improve' the product of audience attention was to include the largest numbers with the greatest spending power, or as Gitlin explains, to 'assemble the largest and richest possible audiences, for whose attention advertisers will pay the highest rates' (p. 280). Networks accomplished this goal by tailoring their programming or content. In this argument, programming serves merely as a pretext for the real business of bringing eyeballs to advertisers. In a passage that plays a central role in our analysis of a parallel between television and commercial social media, Williams develops a number of points related to Gitlin's critique. Because of its importance in our discussion, we quote Williams' passage at length:

[t]he sponsorship of programmes by advertisers has an effect beyond the separable announcement and recommendation of a brand name. It is, as a formula of communication, an intrinsic setting of priorities: a partisan

indication of real social sources. . . . to see international news brought courtesy of a toothpaste is not to see separable elements, but the shape of a dominant cultural form. The insertion of advertisements in unsponsored programmes is a different formula; it has had, as we shall see, extraordinary effects on television as a sequential experience, and has created quite new visual rhythms. Indeed it is possible to see television of this kind as a sequence in which the advertisements are integral rather than as a program interrupted by advertisements. (*Television: Technology and Cultural Form*, Williams 1974, pp. 66–67)

Williams is discussing the relationship between two types of content constitutive of television as a cultural form. The first is content or programming that is tailor made for the insertion of commercial breaks. In this case, content and ads are melded into 'a dominant cultural form' that is unambiguously ideological, involving 'an intrinsic setting of priorities. . . . a partisan indication of real social sources'. In the case of the second type of content, where ads are inserted in programming that is otherwise unsponsored (e.g. a movie), a 'different formula' applies. In this context, ads and content oscillate in a sequence or rhythm of mutual dependence. Sequence, rhythm and flow in television that is otherwise 'non-commercial' render advertising interests inseparable from what the user sees. The relationship between content and advertising in this case appears as insidious, insinuating itself in the formal characteristics of flow, rhythm, and sequence. Something similar is applicable in online social networking where *informational design*, *architecture*, and *algorithm* render advertising interests inseparable from what the user sees and is able (or not able) to do on a social Web service that has been recently considered revolutionary for learning.

New learning for the social Web

What of the education which TV or the social Web is to serve? Williams was not entirely despairing of the educational potential of the medium in the context of the British Television System with its taxes on individual TV sets that are used to support commercial-free BBC and Open University programming. He saw these 'developed educational service[s]' as providing 'a remarkable demonstration of some of the true possibilities of television' (Williams 1974, pp. 50–51). However, some American observers, writing in a much more commercialized media ecology, were much less positive in their assessments. Writing presciently in the 1968

inaugural volume of *Educational/Instructional Broadcasting*, Gabriel Olfeish (1968) predicted 'the failure of educational television'. He saw this failure as arising from the gulf between the production values of commercial programming compared with its educational counterpart. He writes

[c]ommercial television has been living the life of virtual luxury while educational television has existed in a climate of genteel poverty. Unable to bid for the skills and talents of commercial media specialists and masters of the communication process, educational television has [transferred a] . . . dull system of [classroom] pedagogy handed down intact from Rabbinical times. It has been transmitted to viewers without any recognition that many viewers very often find dogfood and soap commercials more attractive and stimulating (pp. 15, 16).

In her recent history of changing classroom media, Margaret Cassidy (2004) confirms Olfeish's assessment by arguing that the commercial culture that framed TV as entertainment in America quickly came to be perceived as anathema to practices and priorities of teaching and learning. Teachers, Cassidy explains, feared that 'children . . . would expect school to imitate the entertaining qualities of television . . .' leading them to believe that 'all learning to be as easy and fun as television' (p. 181).

Cassidy sees these reservations as fitting a familiar pattern of the introduction of new media technologies into education. This pattern is one which may apply to social networking media as well. Cassidy describes the arrival of successive waves of technologies in education as resulting in a dynamic of oscillation, 'with [each] new technology providing [a] new push, after the old one comes back with disappointing outcomes' (p. 262). However, while a particular technology is new, and its possibilities (and limitations) unknown, Cassidy indicates that the push that it provides for change can be overwhelming and all-encompassing.

Indeed, imperatives to adopt new technologies are echoed in calls for the educational use of social networking, Web 2.0 tools, and software more generally. Provocative labels like 'connective learning' (Downes 2006), 'e-learning 2.0' (Downes, 2005), 'education 2.0' (Selwyn 2008), and 'social Learning 2.0' (Anderson 2007) have been used to characterize what is seen as the radical potential of these services for learning. The implication is that these technologies will introduce radically new 'versions' of learning and education.

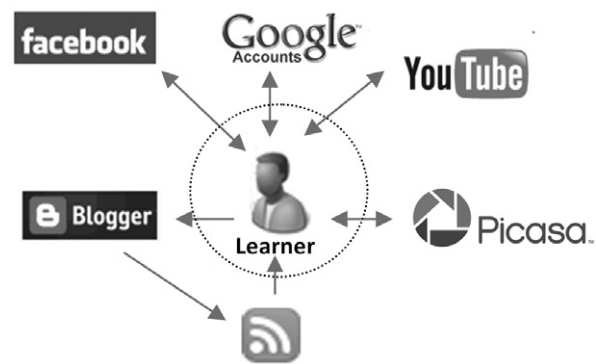


Fig 1 A simplified Personal Learning Environment diagram; for many more examples, see Leslie 2009.

These 'versions' of learning are above all associated with the 'personal learning environment', a term coined early in the 2000s, and typically illustrated through diagrams similar to, but often more complex than, the one provided here (see Fig 1). In a technical sense, as the figure indicates, these learning environments are constituted through loosely defined collections of Web 2.0 and social networking applications to access and manage a wide range of learning communities and contents.

In these figures, the personal learning environment is envisioned as a set of applications and services that are represented by logos and brands that are organized around a single user according to their learning and informational preferences and needs. The learner is regarded as interfacing with these services and this information either through standard desktop software [e.g. a browser and really simple syndication (RSS) feed aggregator], or as having these services integrated through an online portal. The services thus organized around the learner typically include YouTube and Flickr, MySpace and Facebook, as well as blogs and other environments. Through these services, the user is connected with teachers, mentors, and other learners: 'It's just you, your community, and the Web, an environment where you are the centre and where your teachers -if there are any- are your peers' (Downes, 2005, n.p.).

Despite the relative novelty of the '2.0' versions of learning associated with personal learning environments and social media, aspects of the underlying conception of learning are not necessarily new. Learning is seen as occurring *collaboratively* by sharing and comparing opinions and viewpoints through conversation, dialogue, and mutual critique. Siemens, for example,

sees conversation and dialogue as indispensable to learning or as part of a connectivist process of network formation:

Connection-forming tools will always create content, but their value lies in [their power to support] our ability to reflect on, dialogue about, and internalize content in order to learn. . . . Learning and knowledge require diversity of opinions (Siemens 2006, p. 76).

In granting dialogue and collaborative reflection such as central function in learning, Siemens and other connectivists follow in the footsteps of many earlier educational technologists and theorists. Whether learning is regarded as occurring through social media, bulletin boards, or in traditional face-to-face settings, figures from Plato through Vygotsky have located – either in their theory or their practice – the role of dialogue and social interchange as central to learning and development. More recently, educational experts who have emphasized the potential of systems designed to facilitate the open sharing of perspective and viewpoints online, hold a similar underlying conviction. For example, in an influential article on ‘critical inquiry in text based [online] environments,’ Garrison *et al.* explain:

an educational experience, in its best manifestation, [is] a collaborative communication process for the purpose of constructing meaningful and worthwhile knowledge. Collaboration is . . . an essential aspect of cognitive development since cognition cannot be separated from the social context. . . . The challenge educators [therefore] face today is creating a community of inquiry in a virtual environment . . . (Garrison *et al.* 1999).

Like Siemens, these authors emphasize the importance of communication and collaboration specifically as processes of ‘deliberation’: the attainment of consensual truth or broad validity through the open sharing, comparison, and evaluation of differing opinions and perspectives. Various terms and models have been associated with this process. For their part Garrison *et al.* emphasize a cyclical model of critical inquiry and the formation of communities around this process. Others refer to processes of critical discourse, collaborative knowledge building, and computer-supported collaborative learning. In the context of this paper, our question is the following: can this collaborative, deliberative and evaluative process, however conceptualized, be supported by commercial social networking services such

as Facebook whose popularity outstrips most other non-commercial platforms and has led to proposals for its employment in education?

The media business model: bringing eyeballs to advertisers

It is important to recall that the success of Web 2.0 and commercial social networking services, such as Facebook and Google, is based on the significant sums from users and advertisers that they attract. These profits are in addition to their actual or estimated market valuation, which, for both Facebook and Google, are in the tens of billions. These sites are in aggressive competition to increase their worth through advertising more efficiently. Facebook is reported to have made \$500 million from advertising in 2009 and is estimated to earn \$1.5 billion in 2010 (Kirkpatrick 2010; Ostrow 2010). In the first quarter of 2010 alone, Google earned over \$2 billion from its advertising programs (AdSense, 2010). Finally, services like Facebook and Google reflect a pattern of gradual concentration of power of both infrastructure and services in interpersonal communication online. Just as Facebook has been integrating email, chat, and other communicative functions to its online environment, Google has been interlinking its email, chat, and productivity tools with its physical server infrastructure. All of these activities highlight a ‘commercial imperative’ which we argue has a both subtle and powerful mutually exclusive relationship to connectivist and ‘2.0 approaches’ to learning.

The absence of references to advertising, user tracking and user data analysis, in many discussions of the personal learning environment, is surprising given the proliferation of logos and brands (of commercial services) in current depictions. A dearth of discussion of advertising in education is doubly surprising given the visibility and ready access that these services provide to their marketing functions and features. Images of the pages offering these marketing services, from Facebook and Google, provide a starting point for our analyses. (Figs 2 and 3). The Google page is publically available: https://www.google.com/adsense/static/en_CA/Publishertools.html. Specific steps are required for registered users to access the Facebook screen.

The options on the Google page, left, address content creators specifically as publishers who, like print or electronic broadcasters of old, deliver ads with their

Earn from your content



Google AdSense enables website publishers of all sizes to display targeted ads alongside their online content and earn money. You can easily display AdSense ads on your website, site search results, mobile sites, feeds, and even your unused domains. [Get started »](#)

Manage and serve your ad inventory



Sell, schedule, deliver, and measure your directly sold and network-based ad inventory with **Google Ad Manager**. [Get started »](#)

Grow your business opportunities



Use **Google AdWords** to promote your business alongside relevant Google search results and on our advertising network. [Get started »](#)

All of our publisher solutions

Earn from your content

Sign up for a [free AdSense account](#) to access all of the following features:

-  [AdSense for content](#)
Display targeted ads on your website and earn from valid clicks or impressions.
-  [AdSense for search](#)
Allow your users to search your site or the web, and earn from ads on the search results pages.
-  [AdSense for mobile content](#)
Display ads on your mobile site to users on the go.
-  [AdSense for feeds](#)
Place relevant ads in your RSS feeds.
-  [AdSense for domains](#)
Earn revenue from your unused domains with targeted ads.

For qualified publishers

-  [AdSense for mobile applications](#)
Place targeted advertising in Android and iPhone applications.
-  [AdSense for TV](#)
Monetize your TV inventory and reach new advertisers.

Manage and deliver your advertising

Discover the right ad serving product for your business.

-  [DoubleClick for Publishers Small Business](#)
Easy-to-use, yet powerful ad serving solution designed to meet the needs of growing publishers.
-  [DoubleClick for Publishers](#)
Next generation ad management platform for driving direct sales revenue and maximizing yield on non-guaranteed inventory.
-  [DoubleClick Publisher Products](#)
Full suite of advertising technology solutions for publishers.

Grow your business opportunities

Learn about our other tools to improve your site and reach your audience.

-  [AdWords](#)
Advertise your business on Google search results or our network of partner sites.
-  [Analytics](#)
Use easy-to-understand reports to make measurable improvements to marketing campaigns and websites.
-  [Ad Planner](#)
Increase your website's visibility and ensure the most compelling description and traffic data is displayed to advertisers.
-  [Website Optimizer](#)
Automatically test different site content in order to maximize visitor conversion rates.
-  [Webmaster Central](#)
Your one-stop shop for comprehensive info about how Google crawls and indexes websites.
-  [Friend Connect](#)
Add social features to get users to engage more deeply with your website and with each other.

Fig 2 Marketing controls or services provided by Google.

published content to audiences. Pages for advertising on Twitter use the same categories and language (see <http://www.adcause.com>). These pages promise content publishers that they can 'drive direct sales revenue', 'maximize yield', and 'monetize content' through Google's ad services. The pages explain that these goals are achieved by 'targeting' particular advertising audi-

ences. The pages address advertising options for a variety of publishing contexts or fora including Google search results and blog pages, RSS and Twitter feeds, as well as the old medium of TV.

Google's search service, in particular, uses complex algorithms to precisely target ads based on detailed tracking and analysis of user searches, the content of

Location

Country: [?]

☐ Everywhere

☒ By State/Province [?]

☐ By City [?]

Demographics

Age: [?] -

☐ Target people on their birthdays

Sex: [?] ☒ All ☐ Men ☐ Women

Interested In: [?] ☒ All ☐ Men ☐ Women

Relationship: [?] ☒ All ☐ Single ☐ Engaged

☐ In a Relationship ☐ Married

Languages: [?]

Likes & Interests

[?]

Suggested Likes & Interests

☐ Loving

☒ Living

Education & Work

Education: [?] ☒ All ☐ College Grad

☐ In College

☐ In High School

Workplaces: [?]

Estimated Reach

11,720 people

- who live in **Canada**
- who live in **British Columbia**
- between the ages of **18** and **40** inclusive
- who like **learning** or **earning money**
- who speak **English (US)**, **English (UK)**, **English (Pirate)** or **English (Upside Down)**

Fig 3 Marketing controls or services provided by Facebook.

Web pages and emails, and a range of additional information. The reader may be familiar with the user-based advertising opportunities available from many blogging services. Users of Google's Blogger service are free to host similarly targeted ads on their pages. Blogger users may receive small payments for every user who clicks on their ad. The users of Google's other services (such as Gmail and Picassa) are thereby continuously exposed to these ads. The Facebook screen, right, illustrates simply and explicitly how such precise targeting is possible. The screen shot is based on detailed demographic information that users provide when they create an account on the service. This information includes location, age, marital status, educational background, place of work, and 'likes and interests'. Advertisers can

narrow their search and select a very precisely defined audience to serve as a target for the Facebook ads. The screen shown in Fig 3 indicates that there are 11 720 Facebook users who could be targeted in British Columbia who are between the ages of 18 and 40, who have indicated an interest in 'learning' and 'earning money', and who also speak English.

According to philosopher of technology Andrew Feenberg, '[w]here ... society is organized around technology, technological power is the principal form of power in the society. It is realized through designs that narrow the range of interest and concerns that can be represented by the normal functioning of the technology and the institutions that depend upon on' (Feenberg 2010, p. 82). If design has narrowed the range of

interest of commercial social media, then the interests could be seen in the functioning of the technology. Because advertising is the *raison d'être* of services like Google, the search engine, and Facebook, the social networking site, it also provides the basis for the design, organization, and maintenance of the services. Google and Facebook design and structure their services in order to attract users but as businesses they cannot do so at the expense of advertisers. Google is legally bound to maximize its profits. The company's first allegiance is to the source of profit, advertisers, rather than to the users whose activities they host. As we argue next, the complex structure and organization of information in these services do not indicate tradeoffs between users and advertisers but rather a reconciling of the interests of the former to the less flexible priorities of the latter. The primary market of Google and Facebook is their advertisers to whom they sell the eyeballs of their users (whose owners may be content to be made passively aware of products and recommendations).

Contemporary media have obliterated the already problematic notion of a monolithic television audience. Rather than marketing a generic product to an audience categorized in the broadest demographic terms, contemporary media generate and refine very specific audiences with the aid of ever more specific user profiling. Digital audience targeting, in television's place, includes a greater variety of what one could call 'audience-products' that advertisers can choose between and with a greater degree of accuracy and efficiency. As the page from Facebook (Fig 3) illustrates, audiences can be very precisely defined or targeted by advertisers on the basis of self-identified age, location, gender, sexual preference, interests, etc. This page from Facebook is essentially a way in which its *real* customers, its 'premium users', are able to customize the product being sold to them much in the same way that customizers might customize a t-shirt or a new car on a seller's website. The business of media organizations was, and remains, bringing eyeballs to advertisers. Now, however, the eyeballs or audience product being sold is pinpointed with a precision and control that would be unimaginable to prior generations of advertisers. Google and other Internet advertisers perform a similar practice less visibly. These services select specific ads to use on the basis of search item keywords, email messages, blog postings, and RSS feeds.

Facebook or Google, unlike television, exercise different or more limited types of control over the *content* that is used to assemble audiences for advertisers. Although commercial media content is pervasive on YouTube, in Facebook and on blogs (see e.g. the daily top stories selected by readers on <http://www.digg.com>), users have a choice regarding the content that they wish to view and disseminate. Online, one can choose the friends, interests, and feeds according to one's own preferences. I can generate my own multimedia compositions (although only a small percentage of users do). With a television, this same user (or viewer) can only choose between options that remote executives have pre-selected.

However, to state that content is not controlled by corporate interests offline but in users' hands online, would elide a crucial point made by Williams in his 1974 critique of the televisual medium (Williams 1974) that we would like to stress. Advertisers' interests subtly but effectively *shape* online social contexts. Hereby, Williams' text, quoted previously, can be modified to speak to commercial Web services today:

The sponsorship of programmes [read: web and feed content] by advertisers has an effect beyond the separable announcement and recommendation of a brand name. It is, as a formula of communication, an intrinsic setting of priorities: a partisan indication of real social sources. . . . to see international news brought courtesy of a toothpaste [today: Netflix or HP] is not to see separable elements, but the shape of a dominant cultural form. The insertion of advertisements in unsponsored programmes [read: user content] is a different formula; it has had, as we shall see, extraordinary effects on television as a sequential experience, and has created quite new visual rhythms. Indeed it is possible to see television of this kind as a sequence in which the advertisements are integral rather than as a program interrupted by advertisements (pp. 66–67).

The parameters of the Web bring a parallel triadic conclusion: content, including non-commercial content, is shaped by commercial interests. In the case of the social Web, a far-reaching but intrinsic setting of priorities is also evident here. Advertisements not only indicate the 'real social sources' for the content provided but also operate in otherwise non-commercial programming via a type of *sequence*, *rhythm*, and *flow*. We argue that, more aptly for the digital age and our examples, what is important for the non-commercial content of the social Web can be termed *informational design*, *architecture*,

and *algorithm*. As we explain next, the three render advertising interests inseparable from what the user sees and is able (or not able) to do on a social Web service.

An architecture of conviviality

The 'real social sources' are perhaps easiest to illustrate with the example of Facebook but could also be illustrated in a wide range of social networking services. Generally, the more 'social' and free the emphasis of the service is, the clearer the influence will be. Users of Facebook may have been struck by the varied ways that the free site cultivates gregariousness and interaction and the manner in which the service faithfully structures and supports sociality and connection. Opening my Facebook page, I am not only asked 'what's on my mind', but also whether I might know users who are not yet friends. I am requested to help a friend find other friends. I am told which friends have become friends of others and I am recommended to visit pages that my friends have liked or recommended (it is perhaps the case that the term 'friend' itself is transformed by this incessant use and quantification). Facebook is consistently structured to support certain modalities of interaction and attention and to exclude others such as traditional educational interaction where teacher–student relations could hardly be defined as synonymous with friendship.

While the dominant social networking sites' intentions are clear, for Williams the outcome of the social adoption of a media technology like the Internet is not and cannot be derived from an analysis of intention. A technological medium's use can be unanticipated by its developers. A technology is full of possibilities and devoid of determining factors of its use and hence social effects (see also Lister *et al.* 2002, pp. 81–82). Accordingly, having discussed the intentions of social web services, we turn to its limitations on practice in order to illustrate the conditions of use of this commercial medium.

We have argued that the imperatives of commercial social media are promotional but how is this imperative expressed through *information design*, *architecture*, and *algorithm*? Commercial imperatives produce a structure of knowledge in a particular form of user interaction based on agreement and 'liking'. Facebook, in particular, exemplifies a method of generating and circulating information that encourages the expansion of intercon-

nections between users (rather than discretion and selectivity), which fosters the disclosure of concerns of favourable interest to those already in relation (rather than the articulation of internal dissent and difference), which facilitates the expression of likes and invitations (but not dislikes and disinclinations), and which foregrounds every new friendship and connection (while suppressing news of severance and deletion). Facebook is in this sense above all *convivial*, whether accidentally or intentionally. 'Convivial' is a term whose meaning and etymology suggest a celebration of togetherness as would happen at a social event. When practising social networking within a platform based on conviviality, expressions of reservation, nuance, and qualification are made difficult if not impossible; and negativity, in both its everyday and dialectical senses, is avoided. There are few, if any, invitations to express dislike or disinclination to the items appearing on one's homepage and there are even fewer ways to note that which is 'not' (to register an absence, to observe an omission, or to be faced with exclusion in general). A model that prefers convivial activity is the result of a myriad of careful design decisions: algorithms for selecting likely candidate friends, for identifying friends in need of further connections, and for featuring appropriate items 'liked' by others. Items are liked and dislike goes underground. All of these processes of selection, identification, and foregrounding necessarily involve exclusion, suppression, and the elimination of other possibilities. However, these 'negative' processes are relegated to the software behind the system and are not readily accessible to users; the user sees more and more potential friends and ongoing opportunities for conviviality.

Many Facebook controversies, such as ones over the precise types of information provided by a newsfeed (in 2006), and the difficulty of controlling detailed privacy settings (in 2010), demonstrate how this design approach serves a business model at the expense of placing users, and potentially learners, in control. One recent controversy ensnared Facebook's 'Like' button. The button has a similar function to 'Digg' buttons in the blogging world. This function can be applied not only to Facebook but also to any page on the Web. The number of uses of the 'Like' button on the Web (beyond but linked to Facebook pages) has doubled every month since the feature was introduced. The controversy arises from the possible addition of a corresponding 'Dislike' button. One Facebook page advocating the 'Dislike'

feature has over 3 million fans and Facebook creator, Mark Zuckerberg, has mused that this capability may be added in the future. A recent popular press article on the subject begins by explaining the significant advantages for advertisers presented by Facebook's 'Like' button, as opposed to a 'Dislike' button:

one obvious benefit is that it lowers the psychological barrier to connecting with commercial entities on [a] site . . . [users] imply [that they] 'Like' that brand's page, resulting in higher engagement. Another is that it increases clicks for web publishers [generally] (Cashmore 2010, n.p.).

Because gregarious behaviour is rewarded on Facebook, seeing others' approval of a resource will draw ever more attention to it. However, the article explains that a 'Dislike' button has none of these advantages. It argues that such a feature would only lead to

significant tension between Facebook, brands, and web publishers. Imagine if Facebook users could not only choose to 'Like' Coca-Cola, but were also provided the option to 'Dislike' the brand. Would Facebook become a more appealing place for brands to spend their marketing budgets and ad dollars . . . or a less appealing one? Now imagine that websites could add 'Dislike' buttons to their pages. Would web publishers rush to add this option, desperate for the negative feedback from their visitors? (Cashmore 2010, n.p.)

To provide the option of expressing dislike for a brand like Coca-Cola or to disapprove of a newspaper report or an article like this one is contrary to Facebook's business interests. As a result, users are deprived of even the most rudimentary affordance for expressing disapproval, disagreement or dissent. So what then are the possibilities offered to education by these services? Who is in control of this rudimentary but important design decision? And what does it mean educationally to be deprived of a 'Dislike' option?

The dynamics here are rather reminiscent of what television of a bygone era had to offer. In both cases, you could similarly watch (i.e. 'Like') the products and lifestyles being showcased or simply walk away. We know that users and viewers generally choose the former and thereby allow their 'control' or interests to be reconciled to the preponderant priorities of advertisers in return for convenience and an entertaining conviviality.

It is not necessary to focus exclusively on Facebook to appreciate the effect on formal educational dissent,

difference, and disconnection that is intrinsic to these networks. Digg uses a similar 'thumbs up' icon to tally the popularity of websites and blog posts and also generally omits the option of indicating a negative response. While a design that has evolved to allow users to express preferences moderates community (maximizes participation and minimizes trolling) in a manner that expressing negativity (that could lead to hostility and shrink the community) does not; and while it may be well intentioned, the intentional social community has an inherent block to education – not disagreeing.

The social networking enabled by Twitter imposes similar convivial constraints. One is only actively informed of new subscribers to one's communications. So far, one is not explicitly notified about either those who have unsubscribed or where one can forward, reply to, or rebut a comment ('retweet'). The report on 'Like' and 'Dislike' buttons in Facebook cited previously can be adapted to apply to Twitter and many other social media: 'Like buttons' and many other connective features of social networks, 'are about connection; Dislike buttons are about division'. Just as competing services systematically avoid division and relentlessly push for connection, it is safe to conclude with the article that 'Facebook will never add a Dislike button' (Cashmore 2010). While Facebook carries no educational brief, the tenants and characteristics of the social Web, of which Facebook is the current exemplar, are influencing online education models. 'Users' may become 'learners'. As we have illustrated, user control will most often, although not always, be marginalized by the structures and features that are of interest to advertisers.

Conclusion: connectivist or commercial priorities?

Despite the current prominence of social-psychological and connectivist theories, disagreement and divisiveness are just as significant to learning as connection. In fact, the consistent pattern of suppressing division, negativity, and interpersonal dissent that is central to the business model of social networking services runs counter to other (non-connectivist) models and recommendations for online student interaction and engagement that have their foundations in education philosophy. Contemporary online examples include constructivist models of collaborative knowledge building (e.g., Scardamalia & Bereiter 2006), communitarian models of collaborative inquiry (e.g. Garrison 2005),

and commonplace advice asking students to critically compare and contrast differing views and experiences. Opportunities for social selectivity, discretion, privacy, and detachment are important preconditions for the acts of disclosure and mutual critique, falsification, and validation that are central to these models. Interaction, in these models (and in the technologies used to support them), unfolds in ways that support much more nuanced expressions of agreement, consent, or difference than what is possible using designations such as 'like', 'digg', or even 'dislike' or 'unfriend'. Such selectivity and discretion are rendered structurally impossible in convivial, commercially contoured environments like Facebook or Twitter. These services, by design, clearly serve interests and priorities other than (and in many cases opposed to) those of learning. If anything, they represent a new way of selling viewers to advertisers, rather than a '2.0' version of social or connective learning or education. Knowledge is not exclusively embodied in ever-growing networks of connection and affiliation and it does not just occur through building and traversing these proliferating nodes and links. Education is clearly a social process but it is probably much closer to an ongoing discussion or debate than an extended celebration with an ever-expanding network of friends.

While they have made no promises of suitability for educational purposes, commercial social media are influencing models of online learning (e.g. Downes 2006; Selwyn 2008; Anderson 2007). Key features of social networking, which are widely 'liked', indicate how crucial components of learning can be barred from occurring. The wholesale adoption of these platforms would threaten educational dialogue as a process that is central to collaborative learning. The *sequence*, *rhythm*, and *flow* functions of commercial social media present, to use Raymond Williams phrasing, 'a formula of communication, an intrinsic setting of priorities' (Williams 1974, p. 66). The difference separating these priorities (in new social technology) from those of education is clear in the *form* of social networks, if not also in some aspects of its *content*. It remains to be seen whether the cultural form of commercial social networking services will be fully unsupportive of educational ends as commercial television has long been and whether websites of the future, as they are not ahistorical, will be embedded with conventions, designs, and decisions that have been established by Facebook's 'like' of conviviality.

Note

¹We have deliberately omitted reference to not-for-profit services and sites (e.g., Wordpress, Wikipedia, and collections of open educational resources) that are also frequently referenced in diagrams and discussions of the personal learning environment because our focus in this paper is on commercial services. We have discussed the significant, positive potential of open educational resources and not-for-profit Wiki services elsewhere (e.g., see Friesen & Hopkins 2008; Friesen 2009).

References

- AdSense (2010) AdSense. Available at: <http://en.wikipedia.org/w/index.php?title=AdSense&oldid=369912991> (last accessed 26 July 2010).
- Anderson T. (2007) *Many Students Loosely Joined: Social Software to Support Learning. EDUCAUSE Learning Initiative Web Seminar*. Available at: net.educause.edu/ir/library/powerpoint/ELIWEB083.pps (last accessed 6 February 2011).
- Cashmore P. (2010) Should Facebook add a Dislike Button? Available at: <http://www.cnn.com/2010/TECH/social.media/07/22/facebook.dislike.cashmore/> (last accessed 2 September 2010).
- Cassidy M. (2004) *Bookends: The Changing Media Environment of American Classrooms*, Hampton Press, Cresskill, NJ.
- Couros A. (2009) Open, connected, social – implications for educational design. *Campus-Wide Information Systems* **26**, 232–239.
- Davis M.R. (2010) *Social Networking Goes to School. Education Week Digital Directions*. Available at: <http://www.edweek.org/dd/articles/2010/06/16/03networking.h03.html> (last accessed 6 February 2011).
- Downes S. (2005) E-learning 2.0. *eLearn magazine: education and technology in perspective*. Available at: <http://www.elearnmag.org/subpage.cfm?section=articles&article=29-1> (last accessed 2 September 2010).
- Downes S. (2006) Learning networks and connective knowledge. Available at: <http://it.coe.uga.edu/itforum/paper92/paper92.html> (last accessed 2 September 2010).
- Feenberg A. (2010) *Between Reason and Experience: Essays in Technology and Modernity*. MIT Press, Boston.
- Freedman D. (2002) A technological idiot? Raymond Williams and communication technology. *Information Communication and Society* **5**, 425–442.
- Friesen N. (2009) Open educational resources: new possibilities for change and sustainability. *The International Review of Research in Open and Distance Learning*. Vol. 10, No. 5. Available at: <http://www.irrodl.org/index.php/irrodl/article/viewArticle/664/1388> (last accessed 2 September 2010).

- Friesen N. & Hopkins J. (2008) Wikiversity; or education meets the free culture movement: an ethnographic investigation. *First Monday*. Vol. 13, No. 10. Available at: <http://www.uic.edu/htbin/cgiwrap/bin/ojs/index.php/fm/> (last accessed 2 September 2010).
- Garrison D.R. (2005) Communities of inquiry in online learning: social, teaching and cognitive presence. In *Encyclopedia of Distance and Online Learning* (eds C. Howard, J. Boettcher, L. Justice, K. Shenik, P. Rogers & G. Berg), pp. 133–148. IGI Global, Hershey, PA.
- Garrison R., Anderson T. & Archer W. (1999) Critical inquiry in a text-based environment: computer conferencing in higher education. *The Internet and Higher Education* 2, 87–105.
- Gitlin T. (1980) *The Whole World Is Watching*. University of California Press, Berkeley.
- Kirkpatrick D. (2010) The Facebook effect: the inside story of the company that is connecting the world. Available at: <http://www.booktv.org/Watch/11663/The+FacebookEffect+The+Inside+Story+of+the+Company+That+is+Connecting+the+World.aspx> (last accessed 2 September 2010).
- Leslie S. (2009) PLE diagrams. *Edtechpost*. Available at: <http://edtechpost.wikispaces.com/page/diff/PLE+Diagrams/110782205> (last accessed 2 September 2010).
- Lister M., Dovey J., Giddings S., Grant I. & Kelly K. (2002) *New Media: A Critical Introduction*. Routledge, New York.
- Muñoz L.C. & Towner T.L. (2009) Opening facebook: How to use facebook in the college classroom. In *Proceedings of Society for Information Technology & Teacher Education International Conference 2009* (ed. I. Gibson), pp. 2623–2627. Charleston, SC. Available at: <http://www46.homepage.villanova.edu/john.immerwahr/TP101/Facebook.pdf> (last accessed 15 May 2010).
- Olfeish G. (1968) The failure of educational television. *Educational/Instructional Broadcasting: The International Journal of Educational Radio and Television* 1, 15–18.
- Ostrow A. (2010) Facebook's '09 revenue to top \$500 million. Available at: <http://mashable.com/2009/07/06/facebook-2009-revenue> (last accessed 2 September 2010).
- Scardamalia M. & Bereiter C. (2006) Knowledge building: theory, pedagogy and technology. In *Cambridge Handbook of the Learning Sciences* (ed. K. Sawyer), pp. 97–118. Cambridge University Press, New York.
- Selwyn N., ed. (2008) Education 2.0? Designing the web for teaching and learning. ESRC Teaching and Learning Research Programme commentary. Available at: <http://www.tlrp.org/pub/documents/TELcomm.pdf> (last accessed 2 September 2010).
- Siemens G. (2006) *Knowing Knowledge*. Lulu Press, Vancouver, BC.
- Williams R (1974) *Technology and Cultural Form*. Routledge, London.
- Yang G. (2009) The Internet as cultural form: technology and the human condition in China. *Knowledge, Technology & Policy* 22, 109–115.

Further reading

- O'Connor A. (1989) *Raymond Williams on Television: Selected Writings*. Routledge, New York.
- Williams R. (1985) *Towards 2000*. Penguin, Harmondsworth.
- Williams R. (1988) Communication technologies and social institutions. In *Contact: Human Communications and Its History*, Reprint edition (ed. R. Williams), p. 3. Thames and Hudson, London.